

In the Claims

Claims 1-10 (canceled).

11. (new) A method for transmitting power to wheels of a motor vehicle with an engine comprising:

recuperating and storing kinetic energy of the motor vehicle in a super-capacitor;

shutting down the engine of the motor vehicle when the speed of the motor vehicle stabilizes; and

using the stored energy in the super-capacitor to supply power to the wheels when the speed of the vehicle is stabilized.

12. (new) The method of claim 11, wherein the speed at which the vehicle stabilizes is less than or equal to 30 miles per hour.

13. (new) The method of claim 11, wherein the speed at which the vehicle stabilizes is less than or equal to 20 miles per hour.

14. (new) The method of claim 11, wherein the motor vehicle further comprises an electric machine connected to a static energy converter with terminals and at least one power semiconductor, the method further comprising:

controlling voltage at said terminals in order to keep the voltage substantially constant and near to a maximum value allowed by the power semiconductor.

15. (new) The method of claim 14, further comprising maintaining the voltage at the terminals of the static energy converter at a reference value U_{ref} , equal to:

$$U_{ref} = \text{MIN}[(U_1 - \lambda \cdot l); \text{MAX}(U_2; (U_3/k))]$$

where: U_1 is a withstand voltage of the power semiconductors;

$\lambda \cdot l$ is an over-voltage at the terminals of the power semiconductors, l being a current passing through the electric machine;

U_2 is the difference between U_1 and a maximum over-voltage at the terminals of the power semiconductors;

U_3 is the voltage at the terminals of the electric machine; and

k is a constant coefficient referred to as the PWM coefficient (Pulse Width Modulation).

16. (new) The method of claim 14, further comprising keeping the voltage at the terminals of the static energy converter between two limit values, the first corresponding to U_2 and the second corresponding to $(U_1 - \lambda \cdot l)$, where:

U_1 is a withstand voltage of the power semiconductor;

$\lambda \cdot l$ is an over-voltage at the terminals of the power semiconductors, l being the current passing through the electric machine; and

U_2 is the difference between U_1 and the maximum over-voltage at the semiconductors.

17. (new) The method of claim 14, wherein the step of controlling voltage at said terminals further comprises keeping the voltage at U_2 , that being the difference between U_1 , the withstand voltage of the power semiconductors, and the maximum over-voltage at the terminals of the semiconductors.

18. (new) A motor vehicle, comprising:

- (a) a heat engine,
- (b) at least one electric machine with a static energy converter, and
- (c) a super-capacitor for supplying and storing energy, connected to the electric machine via a reversible DC-DC converter.

19. (new) The motor vehicle of claim 18, wherein said DC-DC converter comprises two transistors.

20. (new) The motor vehicle of claim 18, wherein said DC-DC converter comprises two resonance converters.

21. (new) The motor vehicle of claim 20, wherein the super-capacitor is connected between the two resonance converters.

22. (new) A method of providing power to at least one wheel of a motor vehicle, the motor vehicle comprising a gasoline engine, an electric engine, and a super-capacitor, the method comprising:

- (a) monitoring the speed of the motor vehicle;
- (b) storing kinetic energy of the vehicle in the super-capacitor;
- (c) when the speed has stabilized:
 - (i) turning off the gasoline engine;
 - (ii) powering the electric engine from the super-capacitor;

(iii) propelling the vehicle using the electric engine;

(d) when the speed has de-stabilized:

(i) activating the gasoline engine; and

(ii) propelling the vehicle using the gasoline engine.